



Excalibur  
Electronics

# Electronic Chess

OPERATING  
MANUAL



Model 901E-4

**C**ongratulations on your purchase of your Excalibur Electronic Chess computer! You've acquired both your own personal chess trainer and a partner who's always ready for a game—and who can improve as you do!

**The legendary King Arthur  
brandished a magic sword,  
Excalibur, from which we take  
our company name. With this  
unique weapon in his hands, he could  
not be vanquished.**

**Although Excalibur Electronics  
can't claim the magical secrets  
of Merlin, King Arthur's court  
wizard, sometimes our patented  
technology may make it seem as  
if we could. Electronic Chess is  
another unmatched innovation  
of Excalibur Electronics.**

**We make you think.**



# Excalibur Electronic Chess

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## CHAPTER I: Installing Batteries

To insert new batteries, carefully turn your Electronic Chess so that the display side is face-down. Remove the battery-compartment panel on the left by loosening the screw and using your thumbnail to pull up gently on the raised latch. Install three fresh AAA batteries, making sure to follow the diagram in each battery slot so that the polarity (+ or -) of the batteries is correct. Replace the battery compartment panel by fitting the two tabs into their receptacles and pushing down on the panel lightly. Re-tighten the screw, but be sure not to over-tighten it.

## CHAPTER 2: Play Right Away

### 2.1 Getting Started

After you have installed the batteries, the LCD will show PLAY. (If it doesn't, press the ACL button on the back of the unit.) This indicates you are at the first move of the game. Set up the magnetic chess pieces, found in the piece-storage compartment located next to the battery compartment, according to the chess rules found in Chapter 7..

Excalibur Electronic's Sabre gives you the white pieces—the ones at the bottom of the board. White always moves first. (You'll see a white square at the bottom of the LCD indicating it is White's turn to move.)

Your Electronic Chess is equipped with a sensory board. The way you select and make your move is very simple. Think of communicating your move as a two-step process—registering the *from* square and



then registering the *to* square of the move you wish to make.

### 2.2 How to Register Your Move

To make a move, press down lightly on the *from* square with the bottom edge of the piece or pawn you wish to move. You will hear a beep, and the coordinate of that square will appear in the LCD. (You might see, for example, E2...) Next press down on the *to* square, the square you wish to move the piece or pawn to. You'll hear another beep letting you know your move has been registered.

If you hear an error buzz, you have made an illegal move, and the illegal move will appear on the screen. To take back that illegal move and make a different move, simply press first on the *to* square and then on the *from* square again to cancel the illegal move.

After you've successfully made your move, Electronic Chess will reply with its move shown automatically on the LCD, for example E7E5. (You'll also notice a black square appearing on the LCD, indicating that it is now Black's move.) Next make the computer's move accordingly, pressing down with the bottom edge of

the pawn or piece on the designated *from* square and then on the *to* square. The chess computer will beep, and the white square will appear again in the LCD to indicate it is White's turn again to move.

### **2.3 Note on special moves**

The castling maneuver does require the rook move also to be registered by pressing on the rook move squares. Also, en passant capturing requires the captured pawn square to be pressed. (Refer to **Rules and Tips** for more information on these special moves.)

## **CHAPTER 3: Key Functions**

Your Excalibur Electronic Chess partner has many valuable special features that can help you learn to play better and better chess—and to have a lot of fun!

### **3.1 OFF/SAVE Key**

This key turns the unit off, automatically saving a game in progress. (Press this key when it is *your* move.) Use the **ON** key to resume the game.

### **3.2 ON/CLEAR Key**

Use this key to turn on Electronic Chess. Also press it to clear an incorrect “*from* square” entry or to exit from other modes such as VERIFY or LEVEL. (See below.)

### **3.3 NEW GAME Key**

Press this key either to begin a new game or to clear the computer's memory.

### **3.4 TAKEBACK Key**

This key lets you take back a move you've decided against. (Press **TAKEBACK** only when it is your turn.) To take back your move, first press **TAKEBACK** and then press on the squares of the computer's reply move, in reverse order, as indicated on the LCD. Next push **TAKE -**

**BACK** a second time and press on the squares, again in reverse order, for the move you made which you wish to take-back, as shown on the LCD. (Remember to replace any captured piece you might have removed. Taking back a capture move requires that you press on the captured piece square with the captured piece.) The computer is now ready for your next move.

### **3.5 SET UP Key**

Use this key if you'd like to change the color of a piece, remove or add a piece, or move a piece to another square. Press **SET UP** and the display will first show the position of the white king. (If you'd like to see the position of a different piece, press **SET UP** and then press the red key which has the correct piece symbol located above it, that is, the **PIECE** key. If there are no pieces of the selected type, the display will show nOnE.) You can next press the piece's square to change the piece's color, and press the same square again to remove the piece. You may also press on any legal square to place the piece elsewhere on the board. The above steps may be repeated as desired. Press **CLEAR** to exit this mode at anytime. (Note: You cannot exit Set Up mode unless there is at least one white King and one black king on the board.)

*Keep this procedure and sequence in mind, and the SET UP procedure will be easy to use: After you press SET UP and the piece-symbol key you select, by pushing the square the piece stands on, you can change its color or remove it. If the piece is White, one push changes it to Black, a second push removes it. If the piece is Black, one push removes it, a*

**When not in use, your chess pieces can be safely and neatly stored in the compartment provided on the back of Electronic Chess at the right.**

*second push reinstates it as White.*

See also Section 4, "Setting Up Special Positions."

### **3.6 VERIFY Key**

Press this key if you need to verify the position of a piece or pieces on the board. When it is your move, press **VERIFY** to check the position of the white queen. Press it a second time to check the position of Black's queen. To verify the positions of other pieces on the board, simply press **VERIFY** and the red key labeled with the desired piece symbol above it. If there are no pieces of the selected type on the board, the display will show nOnE. To exit this mode, press **CLEAR**.

### **3.7 MULTI-MOVE Key**

If you want to have the computer monitor two human players, press **MULTI-MOVE**. A zero (0) will appear in the display, and a beep will signal if an illegal move is made. You may now enter moves for both sides (rather than allowing the computer to play.) When you wish to resume normal play again with one human playing against the computer, simply press **MULTI-MOVE** again.

### **3.8 HINT Key**

Press this key if you want to get hints from your Electronic Chess chess partner. A recommended move will appear on the screen. You may accept and make the move, or press **CLEAR** to enter a different move.

Press **HINT** a second time to view the computer's evaluation of your position.

### **3.9 LEVEL Key**

Use this key to set the level of play. The higher the level you select, the better your Excalibur Electronic Chess computer will play, and the longer it will think during its moves. The first four levels (1, 2, 3 and 4) are beginner levels and take approximately 4, 8, 12 and 16 seconds per move, respectively. Level 5 is a fixed 1-ply (one-half move) search. Levels 6 through 15 take about 1 second per level number, so level 10 will average about 10 seconds per move. Levels 16 through 72 take about 2 seconds per level number.

Press **LEVEL** once to display the current level. (The default level is set to Level 6, which allows six seconds for an average response.) Press **LEVEL** again to increase the level by one. You can press the **MODE** key to increase the level by ten. (The levels start over again after Level 73 with Level 1 if you want to choose an easier level.) Press **CLEAR** to exit this mode.

Level 73 is an infinite level. Electronic Chess will take as long to move as you want it to, or until either it finds a mate position in its search or its search memory is exhausted. Level 73 is good for problem solving, or it can be used to play against. When you are tired of waiting for the computer to move, press the **MOVE**

key while the computer is thinking. The computer will stop thinking and play the best move it's found so far.

### **3.10 MOVE Key**

You may press this key when it is Electronic Chess' turn to move and thereby force the computer to move right away. If it is your turn to move, you may press **MOVE** to switch sides with the computer. (The computer will then make the next move as White.) And if you'd like to play the black pieces from the bottom of the board, first press **NEW GAME** and then **MOVE**.

### **3.11 SOUND Key**

Your chess computer is available for a game day or night, so you may wish at times to turn the sound off. Simply press the **SOUND** key to turn off the beeping sound, or push it again to resume.

### **3.12 MODE Key**

Electronic Chess offers a teaching mode to help you learn the rules of movement for each piece. To enter the teaching mode, press **NEW GAME** and then **MODE**. (You will see SPCL in the display window.) Then select from one of the following modes:

Mode 1: King and pawns

    Press the PAWN symbol key

Mode 2: Kings, knights and pawns

    Press the KNIGHT symbol key

Mode 3: Kings, bishops and pawns

    Press the BISHOP symbol key

Mode 4: Kings, rooks and pawns

    Press the ROOK symbol key

Mode 5: Kings, queens and pawns

    Press the QUEEN symbol key

Be sure to remove the pieces not in use from your board. Then make the first move. Your object is, of course, to checkmate the opposing king.

### **3.13 BLACK/WHITE Key**

To begin a game with White on the bottom and the computer making the first move, press **BLACK/WHITE**.

This key is also used to tell the computer whose move it is during problem solving. (See below.)

## **CHAPTER 4: Setting Up Special Positions**

This is a terrific feature that allows you to solve problems that you see in magazines or newspapers, or that you make up yourself. It also allows you to enter game positions you want to play, or that you want Electronic Chess to look at, perhaps using the Infinite Search level.

Normally it is easier to start from an empty board to set up such problems. So first, clear the board by pressing **NEW GAME**, **SET UP** and **MODE**. Place the desired pieces on the board by pressing the **PIECE SYMBOL** key and the square to be occupied--press once for White, twice for Black.

After setting up the pieces, tell the computer whose move it is by pressing the

**If no button is pushed for 10 minutes, your  
Electronic Chess will switch off to save your batteries.  
Don't worry, it will save your game in memory.  
Just push the ON button to continue.**

**BLACK/WHITE** key. The word SIDE will appear on the display. Press the key repeatedly until the black or white indicator box in your display is the color you wish to have move first. Next, press **ON/CLEAR**, followed by **LEVEL**. Set the computer to LEVEL 73, the problem-solving level, and press **ON/CLEAR** again.

**NOTE:** We recommend using the **VERIFY** function after setting up a problem-solving position to check that the positions of all the pieces.

## CHAPTER 5: Special Features

### Position Score

During a game, you may press the **HINT** key twice to get your computer's evaluation of the position. The scoring totals the following values: Pawns—1, Knights—3, Bishops—3, Rooks—5, and Queen—9.

### Smiling Faces & Frowning Faces

Whenever Electronic Chess evaluates your position as 2 points or more ahead, it will show a smiling face when it displays its move. Whenever it evaluates your position as 2 points or more behind, it will show a frowning face when it displays its move.

### Opening Book Library

To speed play in the beginning of the game and make its moves accurate, Electronic Chess has an opening-move library of 250 moves. When the comput-

er uses one of these moves, its display will read OPEN.

**Computers can sometimes "lock up" due to static discharge or other electrical disturbances. If this should happen, use a slim, pointed object to press the button marked "ACL" on the bottom of the unit.**

## CHAPTER 6: Troubleshooting

### The display is blank.

Check the batteries to see that they are installed correctly and that they are not too weak. Otherwise, insert a safety pin (or another sharp, thin object such as a pen) into the ACL hole (reset) located on the lower back of the computer.

**Computer gives an improper response.** Use the **VERIFY** function to check whether a mistake was made in moving the pieces. Check also that the *to* square has been properly pressed for your move. Finally, check that the move you wish to make is legal. Check that *en passant moves* were performed correctly, for example, and remember you cannot move and remain in check. You also may not castle through check.

**LCD messages are dim or faded, your computer functions undependably or displays impossible moves.**

Install new batteries immediately. See Section 1 above.

**For best results, always use alkaline batteries. Be sure to check their expiration date because fresh batteries will ensure uninterrupted usage and enjoyment of the product. Remove the batteries if the product will not be used for an extended period. If the product does not perform as expected, check for proper battery charge and correct battery installation, or try a fresh set of batteries.**

# CHAPTER 7: Rules & Tips

**Object of game:** Checkmate

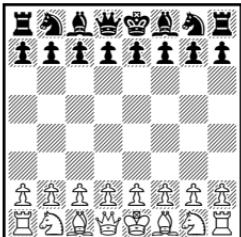
**Setting up to play:** White moves first and so begins with a small advantage.

The board is positioned so that each player has a white corner square on his far right (“light on right”). The rooks are placed on the two corner squares to the

left and right. The two knights are placed on the squares next to the rooks. Next to these are placed the two bishops and, in the center, the queen and king. The White queen is always positioned on a light square and the Black queen on a dark square (“queen on her own color”). The eight pawns are placed on the squares in the second row in front of these chess pieces.

**Moving the pieces:** All legal moves for each selected piece will be shown at one time. With the help of Electronic Chess, you will quickly learn the movements of all the pieces “by doing.”

The pawns can move only forward. For the first advance from its initial square on the second rank, a pawn has the option of moving one or two squares, but after that it can move only one square at a time. The rook can move any number of squares, but only on the ranks and files. The bishop moves only on the diagonals. The queen can move in any direction over unoccupied squares, thus being able to move on any open line. Except for the



*The starting position*

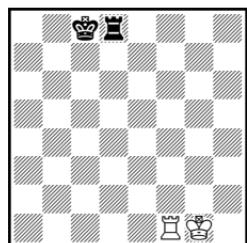
knight, none of the pieces can jump over men of either color or change direction during a move. The knight move is in the shape of an “L,” moving

two squares up or down, and then one square over. Or it can be one square up or down, and then two over. The king moves in any direction. But it can't move into check (attack by an enemy man).

## Special Moves

**Capturing a piece:** Apart from the pawn, all pieces capture in the normal direction of movement as described above. The pawns, however, which normally move only in a straight line, may capture only diagonally to the left or right in front of its square. A player doesn't have to capture an opponent's man.

**Castling:** This is an important move that whiskers your king into safety and gets your rook into action. The move is executed by moving the king two squares towards the rook and then placing the rook on the square passed over by the king. A player can castle only once in a game.



*After castling: kingside (White) & queenside (Black)*

Castling is legal if neither the king nor the involved rook has yet moved, if all the squares between the king and rook are vacant, if no enemy piece controls the squares through which the king has to

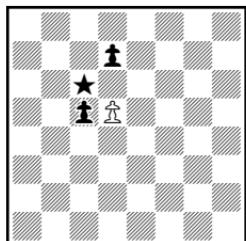
move, and if the king is not in check.

**Capturing *en passant*:** This is a special pawn capture that doesn't happen often but comes in handy to know! This move has a good purpose—to keep the game from being blocked by interlocking pawns. Capturing *en passant* (French for "in passing") is possible only when one side's pawn has advanced to the fifth rank, and a

neighboring enemy pawn then advances two squares at once from its original square. Then on the very next move, the player whose pawn is on the fifth rank can capture the opposing pawn as if it had advanced only one square. If the player does not capture in this way on his very next move, he loses the option.

**Promotion:** A Pawn can be promoted if it advances all the way to the far side of the board. It is immediately promoted, as part of the same move, into a queen, rook, bishop, or knight, whichever its owner chooses. Since a queen is the most powerful piece, it is nearly always chosen as the promotion piece. Through the promotion process, there may be more than one queen on the board at the same time.

**Check:** If the king is attacked (in check), the player is then obliged to protect his king either by moving it to another square, moving one of his own pieces between the king and the threatening piece (blocking), or by capturing the



*En passant:* Black just moved his pawn two squares; White can capture on the square marked with a ★.

attacker.

**End of game:** If a player's king is in check and can't escape or block the check, the king is checkmated and the game ends in favor of the opponent, regardless of the number of men remaining on each side. At any time, a player can voluntarily resign—his opponent wins. A game is a draw (tie) when the players no longer have material required for checkmating, or one side is unable to escape a series of checks (not checkmate), or when one side is in stalemate—stalemate exists when one side has no legal moves but is not in check. A game can also be drawn by mutual agreement between the players.

### Some Tips on Chess

1. Move only one or two center pawns in the opening. Then develop your knights and bishops so that they control the center.
2. Chessmen that aren't pawns are called "pieces." Get your pieces (off the back-rank and into the game before beginning an attack!
3. Castle your king into safety and rook into play as soon as possible.
3. View each of your opponent's moves as a potential threat—look carefully to see if his move attacks one of your men.
4. Exchange less valuable men for more valuable men. The chessmen who can be captured are valued as follows: pawn (1), knight and bishop (3), rook (5), queen (9).

**Excalibur Electronics** reserves the right to make technical changes without notice in the interest of progress.

# CHAPTER 8: Special Care & Batteries

## 8.1 Special Care

- Avoid rough handling such as bumping or dropping.
- Avoid moisture and extreme temperatures. For best results, use between the temperatures of 39°F and 100°F (4°C and 38°C).
- Clean using only a slightly damp cloth. Do not use cleaners with chemical agents.

## 8.2 Battery Information

Electronic Chess uses 3 AAA batteries.

- CAUTION: BATTERIES SHOULD BE REMOVED & REPLACED BY ADULTS ONLY.
- Do not mix old and new batteries.

# CHAPTER 9: Limited One-year Warranty

EXCALIBUR ELECTRONICS, INC., warrants to the original consumer that its products are free from any electrical or mechanical defects for a period of ONE YEAR from the date of purchase. If any such defect is discovered within the warranty period, EXCALIBUR ELECTRONICS, INC., will repair or replace the unit free of charge upon receipt of the unit, shipped postage prepaid and insured to the factory address shown at right.

The warranty covers normal consumer use and does not cover damage that occurs in shipment or failure that results from alterations, accident, misuse, abuse, neglect, wear and tear, inadequate maintenance, commercial use, or unreasonable use of the unit. Removal of the top panel voids all warranties. This warranty does not cover cost of repairs made or attempted outside of the factory.

Any applicable implied warranties, including warranties of merchantability and fitness, are hereby limited to ONE YEAR from the date of purchase. Consequential or incidental damages resulting from a breach of any applicable express or implied warranties are hereby excluded. Some states do not allow limitations on the duration of implied warranties and do not allow exclusion of incidental or consequential damages, so the above limitations and exclusions in these instances may

- Do not mix alkaline, standard (carbon-zinc) or rechargeable (nickel-cadmium) batteries.
- Do not use rechargeable batteries.
- To avoid explosion or leakage, do not dispose of batteries in a fire or attempt to recharge standard or alkaline batteries.
- Be sure to insert batteries with the correct polarities & always follow the toy and battery manufacturer's instructions.
- Remove batteries and store them in a cool, dry place when not in use.
- Always remove old & dead batteries from the product.
- The supply terminals are not to be short-circuited.

not apply.

The only authorized service center in the United States is:

**Excalibur Electronics, Inc.  
13755 SW 119th Ave  
Miami, Florida 33186 U.S.A.  
Phone: 305.477.8080  
Fax: 305.477.9516**

**[www.ExcaliburElectronics.com](http://www.ExcaliburElectronics.com)**

Ship the unit carefully packed, preferably in the original carton, and send it prepaid, and adequately insured. Include a letter, detailing the complaint and including your daytime telephone number, inside the shipping carton. If your warranty has expired and you want an estimated fee for service, write to the above address, specifying the model and the problem.

**PLEASE DO NOT SEND YOUR  
UNIT WITHOUT RECEIVING AN  
ESTIMATE FOR SERVICING.  
WE CANNOT STORE YOUR UNIT!**

The logo consists of the word "EXCALIBUR" in a stylized, italicized font. The letters are bold and have a metallic, reflective texture. The "X" and "C" are particularly prominent and slanted.

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**We make you think.**